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MODERN EDUCATION IN CHINA. II

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EDUCATIONAL NEEDS AFFECTED BY INTERNAL CONDITION AND INTERNATIONAL SITUATION

A review of China's internal condition and international relations leads to certain conclusions regarding the types of education most urgently needed.

China is destined to become one of the foremost producing nations of the world, a vast market, a huge stabilizing, peaceful power if allowed to develop its great wealth in its own way. The shortest road to a partial success in this endeavor to preserve free nationality in Asia is the development of China's material resources, which will not only enrich China and the world, but will help to arouse the people from their age-long sleep, and to create a sense of nationhood.

The introduction of foreign capital and the internationalization of foreign interests in a coöperative spirit with China and the supervision by a League of Nations constitute the only hope as regards China's foreign relations and even as regards her internal development. The fundamental element in all this from the Chinese side is more general education of the people to give the background for progress and the training of native leaders upon whom must rest the responsibility for carrying out in detail such plans as may be formed for the alleviation of present conditions.

It is just here that one of the functions of our mission colleges in China comes in—to train these leaders in situ, without loss of connection with China; for they need to know China as well as Western science and institutions and methods. Certain types of education demand special

attention if China is to be prepared adequately to meet even her immediate needs. These are the departments of engineering, agriculture and medicine. Concerning each of these we venture to offer a brief and suggestive account.

Engineering

The ever increasing outside demand for China's products, makes it imperative that she be integrated industrially as well as politically for only by responding adequately to this call of the time for industrial development can she retain even that measure of national independence which she still possesses and lay the foundation for ultimate complete independence.

Of primary importance in this connection is the more adequate development of better means of communication, railways, trolley lines, automobile roads, telegraph and telephone systems.

This development of communications is not only fundamental to other industrial development but is of special urgency in China in order to alleviate the famine conditions frequently arising as a result of floods by permitting the more rapid and more adequate movement of food supplies to regions in want, and furthermore the development of the lines of easier transport of both goods and people will serve to unify the people and bind them together whereas now it is exceedingly difficult for a sense of nationhood to be developed among a people so widely separated by rivers, mountains and dialects with no trunk lines connecting the north with the south or the east with the west; the existing railways are practically confined to the north-eastern quarter of the country and the total in the whole country is a little over 6500 miles, whereas we are finding our 265,000 miles inadequate for a country of the same size.

It is essential that *within China's own borders* adequately equipped schools should be established in which the Chinese may be taught the arts and sciences necessary to the development and maintenance of such utilities.

Fundamental to railway and other industrial development is the exploitation of the mineral wealth of China,

especially that in coal, oil, and iron, as well as the ore deposits of other metals. No geological survey of Chinese dominions has yet been made and the Chinese themselves have never developed the art of mining to any great degree. There is urgent need of scientific investigation under China's own auspices of both the general geological structure and the specific commercial values. The actual reconnaissance would in great part furnish the means of the needed training in a working form. The intellectual processes involved in such work are precisely those which the youth of China especially need as a corrective of the traditional neglect of the inductive method; and the intellectual and even ethical results of a thorough investigation of the natural resources of their land, even though inspired primarily by economic considerations, would if carried out on broad and sound lines be greater even than the industrial and commercial results.

Some attempt to meet the need of education in the various lines of engineering is being made at Peiyang University, the Government University at Peking, the Mining and Engineering College maintained in connection with the Peking-Mukden Railway at Tangshan three hours east of Tientsin, at the Government Institute of Technology at Shanghai, and in a less substantial way at Taiyuan in Shansi and at Chengtu in Szechwan. Then there is the engineering department of Hongkong University which, however, is strictly speaking not in China and can never effect the same result as an institution on Chinese soil and under Chinese control. None of these institutions is really adequately equipped or staffed in comparison with the need for high-grade engineering education. Nor are any of the mission colleges prepared as yet to render any adequate service in this connection.

Agriculture

The fundamental industry in China is agriculture, some two-thirds of the entire population being thus employed; and because the more complicated industries based on the mineral resources are so largely undeveloped and will be

slower in their more adequate improvement, the resources of the soil are of special and more immediate importance. Perhaps the greatest opportunity for industrial improvement in China lies in this department. The methods and the very implements are said to be the same today as in 2700 B.C. The Chinese agriculturalist is an expert intensive gardener but knows little of extensive farming or of the improvement of plants and animals by selection and breeding. Moreover the area under cultivation could be greatly increased. The use of the grass lands for cattle raising, and the development of dairy products as well as a meat supply offers a tremendous opportunity.

With proper organization and administration along these lines of education and the development of communications, the land could readily support not only the present population with a greater margin of livelihood but would even produce raw materials and foodstuffs for export in much greater quantities than today.

Then too the afforestation of China's hillsides is imperative; for at least one-sixth of the area of China proper that is the only hope. Besides the need for fuel and for building timber, there is the urgent matter of flood prevention by control of rainfall and runoff over these hilly and mountainous regions. While a forestry advisor (an American) is employed by the central government it is a question whether his advice is adequately followed or whether he is given any opportunity to effect the sorely needed improvements.

And finally there is the great problem of conquering the desert lands. Perhaps a twentieth of China proper is so arid and sandy as to be put in the desert class, and then there are the extensive deserts in the dependencies of Mongolia and Chinese Turkestan. In view of the need to overcome the great deserts of America, Australia and Africa, as well as these in Asia, this problem of developing plants and methods that will aid in creeping out step by step upon the desert instead of allowing the desert to advance upon the present habitable areas is of great importance to mankind. And to its solution the Chinese if trained in scientific

lines and endued with the scientific spirit will be no mean contributors.

All these considerations emphasize the need for agricultural education in China not only for China's benefit but also for that of the world at large.

The central government has undertaken the development of a School of Agriculture and Forestry in Peking, and a few of the provinces have local experiment stations with some attempt at instruction. In two provinces, Shantung and Szechwan, a large number of so-called agricultural schools are reported in the Educational Directory of 1918: no less than 67 and 17 respectively; but it is to be feared that these as well as the other eight government agricultural schools reported for other provinces are of inadequate grade and attainment. The institutions under missionary auspices which lead in this work are Nanking University and Canton Christian College, where courses of collegiate grade both theoretical and practical are offered in the various phases of agricultural education and it is encouraging to note how popular these courses are. There is no limit to the opportunity for effective service in this department except that imposed by lack of funds.

Medicine

Disease is rife throughout China and the death rate is probably higher than in any other country. The mental power and economic efficiency of the nation as a whole is thereby greatly lessened.

Unhygienic conditions are offset somewhat by the practice of eating no uncooked food and drinking weak tea made with boiling water. A public health service is almost unknown and so smallpox, tuberculosis, and leprosy go practically unchecked. The spread of pneumonic plague in 1910-1911, however, aroused the Government and some measure of a preventive service has been established. The autopsies then permitted led to official authorization for autopsies and dissection throughout China beginning November, 1913; but full advantage of this privilege can only be had gradually.

China has long had her own practitioners of the healing art, and there is quite a volume of Chinese materia medica. Quinine, for instance is widely used, and inoculation for smallpox has long been practiced. There is a very thriving business today in patent medicines, among which unfortunately certain foreign concoctions predominate and through some, sent in largely through the Japanese Post Office, the morphia habit is all too readily assuming the rôle formerly held by opium. There is no legal control of the practice of medicine in China. The Chinese old-style practitioner has no knowledge of surgery.

Private practitioners of western methods are for the most part confined to the treaty ports; among them are a few Americans or Europeans but more Japanese, mostly of inferior training. There are perhaps 60 or 70 Chinese modern physicians educated in Europe or America, but most of these work in hospitals or medical schools, not as practitioners. There are a few graduates from missionary medical schools who are now practicing, but there have been to date probably less than 160 such graduates and many of them are working in mission hospitals or medical schools. On the whole then, outside the mission hospitals and outside the treaty ports there are very few practitioners in China who have had any training in western medicine and almost none who have been adequately trained.

The first hospital in China was established in Canton under American missionary auspices in 1835. The first government hospital was inaugurated at Tientsin as late as 1904 under army auspices. The only hospital for the insane in all China is also in Canton and maintained by American missionaries. Although medical instruction began decades ago in an informal and inadequate way in connection with the mission hospitals, medical schools even under missionary auspices are of only recent development, mostly since 1908.

A dozen medical schools under Protestant missions with a total foreign staff of 80 and a modern-trained Chinese staff of 30 look after some 600 students, of whom less than 100 are women. Two-thirds of all the medical as also of

the educational work in China under Protestant missionary auspices is conducted by Americans. Some 250 American physicians and 90 nurses aided by 20 Chinese physicians (modern trained) and 400 assistants and 600 nurses attend annually some 2,300,000 patients. The value of this medical work as a remover of prejudice and a door-opener cannot be overstated, let alone its real humanitarian value as such, which appeals to the Chinese sufficiently to draw contributions of some \$500,000 Chinese currency, annually for the support of medical work under American auspices. The chief centers for this hospital and educational work are Mukden, Peking, Tsinan, Chengtu, Hankow, Changsha, Nanking, Hangchow, Shanghai, Foochow, Canton. The foreign staff of a missionary medical school ranges from four to fourteen, the investment in plant from \$10,000 to \$210,000 each, the annual cost of maintenance from \$10,000 to \$50,000. The number of graduates is small, totalling to date about 160; tuition is low, \$100 Chinese currency, or less.

The central government maintains two medical schools, one in Peking and one in Tientsin in connection with the army. Provincial medical schools have been attempted at Tientsin, Wuchang, Nanchang, Soochow and Canton, perhaps elsewhere also, but except at Tientsin they have not amounted to much. This Peiyang Medical School, which must be distinguished from the Peiyang Military Medical College also at Tientsin, gives probably the best medical instruction of any government institution. It is the outgrowth of the work of Dr. John Kenneth McKenzie of the London Missionary Society whose skill attracted the attention of Li Hung-chang when he was Viceroy of Chihli. It is now officially recognized and supported as a government institution. All instruction is in English.

In November, 1912, the Ministry of Education issued outlines and regulations for "Special Medical Colleges." These are meant to correspond to the schools in Japan similarly designated; a four years' course, for which the curricula must be approved by the Board of Education, though the school may be developed under private auspices.

Such are being conducted at Nanchang, Wuchang and Canton where there are two, although one of them is largely inspired by and dependent on the efforts of two American physicians.

The total enrollment in these government and special medical schools is about seven hundred. All of them lack access to satisfactory hospitals for clinical instruction.

There would be no greater force for the regeneration of China than an adequate corps of well-trained Chinese women physicians inspired with Christian ideals of character and service. Yet there are but three institutions under missionary auspices, and but one under Chinese auspices where any attempt is made to provide women with medical education, and all of these are small, poorly equipped, understaffed and ill-prepared to train competent physicians. Of course, the girls of China lack as yet adequate preliminary education, but this condition is improving. There is of course great need for high grade nurses as well as physicians. Even from the existing schools, the oldest of which dates from 1900, there are but a hundred graduates all told, and most of them could not rank as independent practitioners.

Besides the missionary medical schools there are a few schools under foreign semi-government auspices, inspired probably by motives of political policy. At Mukden, the Japanese have inaugurated a promising school with a staff of twenty. At Tsingtau and at Shanghai, the Germans had begun the preliminary stages of modern medical schools when the war stopped their progress. At Canton the French conduct a hospital and medical school, with three physicians detached from the French army; but it is entirely inadequate as a teaching institution.

No medical school in China is adequately equipped and none is adequately manned, though some include on their staff most excellent men and aim at high standards and are following sound policies. The whole aspect of this problem has been modified within the last few years by the entrance into the field of the China Medical Board of the Rockefeller Foundation, which has stimulated real progress by giving aid under proper conditions to a number of hospitals through-

out the country, by affording opportunities for further training and research to a number of missionary physicians when on furlough, and to a number of Chinese graduates in modern medicine, by assisting in the development of more adequate premedical courses at Changsha, Shanghai and Foochow in connection with existing institutions, by strengthening greatly the medical school of Shantung Christian University where the medium of instruction is Mandarin, and by the reorganization of the Union Medical College at Peking where the medium of instruction is English. In connection with this last institution a premedical faculty has also been provided, and for the hospital and medical schools very extensive buildings are now in course of construction at a cost of several million dollars gold.

A large medical faculty is being provided and their work will undoubtedly affect medical standards throughout the land in due course. But in view of the great need for adequately staffed hospitals, all over the land, and for qualified private practitioners, only the hem of the problem has been touched.

The China Medical Board proposes in due time to establish a similar plant and staff at Shanghai. South China properly speaking is still neglected although the region of Canton is especially rich in clinical material of all sorts, particularly of certain tropical diseases. The medical school of Hongkong University is not on Chinese soil, charges very high fees and does not have a whole-time faculty, but is manned almost entirely by physicians whose chief concern is their private practice. These reasons, especially in view of the natural attitude of the Cantonese toward an institution wholly under British control and on British soil, make it extremely desirable to develop in Canton a medical school of the highest grade under joint missionary and Chinese auspices. No greater opportunity for effective philanthropic investment can be found in China than now offers in connection with medical work at Canton where ninety years ago such work entered China, yet where existing institutions today are not adequate to the situation.

CAUSES OF BACKWARDNESS

The fundamental element in the three types of education just discussed is of course natural science in its many branches and this involves the realm of ideas most in contrast with the content of Chinese education of the old type. But even more fundamental than the difference in content is the difference in method and attitude for it is here that the major causes of China's backwardness in science are discovered:

Absence of the inductive method

"Method" is the distinguishing characteristic of modern science, "inductive method" if you please; and this has been almost completely lacking among the Chinese, whose philosophers have preferred *a priori* deduction, and give great weight to analogy.

Western teachers of Chinese students are constantly impressed with their readiness to argue by illustration and to accept a single illustration as proof; not that they consider that a single exception to a rule invalidates its generality, but that from a single case a general law can be deduced.

The method of the Chinese philosophers was *a priori*, and it seems that they adopted this course, not through ignorance of the experimental and inductive method, but from choice.

We see the sages of China, vainly seeking a short cut to universal knowledge by following what they considered by the light of inner reasoning to be the order of nature, instead of laboriously studying one thing at a time in order to connect "all the particulars by general laws."

Spirit of inaccuracy

A spirit of inaccuracy or of indefiniteness, of being satisfied with very approximate statements, as well as with assumptions instead of proofs and of generalizing from a single case, is most prevalent and will only be dispelled by the spread of modern education. There is no more vexing factor in the life of a foreigner in China than the utter lack

of accuracy among the Chinese in most matters involving numerical relations. The ordinary troubles that one has with careless and even dishonest workmen and contractors are enhanced many fold by reason of the discrepancies between the various measures used for different purposes though called by the same name. The method by which the units were adopted and fixed is lost in antiquity, and the variations in the measures now used destroy any claim that there ever was a true standard such as those recognized and employed by western peoples to-day. For instance, the *chih* or unit of length differs according to the province and the prefecture, the city and the ward, the craft and the usage. There are over a hundred different values of the *chih* actually in use, the extreme values differing by more than 6 inches in a unit of approximately 14 inches, on the average. In some places the carpenter's rule so differs from the mason's that in a building 100 feet long, if the same specifications in Chinese measure were furnished to masons and carpenters, the frame of the house would overhang the stone foundations by 2 feet. In most cloth shops there is one measuring rod to use in buying and another to use in selling, and it does not take a Solon to tell which is the shorter. The maker of measuring sticks or of balance rods keeps a stock of ungraduated blanks and inserts the brass points to suit the wishes of his customer. Nearly every householder has his own set for checking against those of itinerant vendors of drygoods and foodstuffs.

The distance between two points A and B, according to Chinese representation, depends not merely on the geometrical factor, but on others which determine the relative facility of travel between these points. It is further from A to B than from B to A, if B is upstream from A on a river, or at a greater elevation on a hill road. It is further between A and B at night or when raining than it is by day or when clear. While of course the practical philosophy of this way of regarding distance is evident, it still is true that such failure to separate these factors from the geometrical factor in the form of statement operates to retard appreciation of accurate statement and accurate thinking.

Paper may be sold by the hundred sheets and yet by a desire to keep the stated cost per hundred uniform in spite of variations in quality the dealer will "call" a less number of sheets a hundred sheets, so that when I requested my servant to buy a hundred sheets of a certain paper, he returned with eighty and insisted that "in that kind of paper a hundred sheets are only eighty."

The whole Chinese system of thinking is based on such a different line of assumptions from those to which we are accustomed, that they can ill comprehend the mania which seems to possess the occidental to ascertain everything with unerring accuracy. Curiously enough, concomitant with the early development of their system of weights and measures—a decimal system for the most part—the Chinese have become fixed in the habit of reckoning by tens, and frequently refuse to make a statement of number nearer to the truth than a multiple of ten. An old man is "seventy or eighty years of age" when you know for a certainty that he was seventy only a year ago. A few people are "ten or twenty," a "few tens," or perhaps "ever so many tens." The same vagueness runs in all their statements, and for greater accuracy than this the Chinese do not care, except when you are paying them money.

The Chinese are as capable of learning minute accuracy in all things as any people ever was—nay, more so, for they are endowed with infinite patience, but what we are here remarking is that as at present constituted they are entirely free from the quality of accuracy and that they do not know what it means except as they come under modern education.

Other causes

Another cause of China's backwardness in modern science is to be found in the lack of or failure to apply mathematical knowledge. Even though their philosophers early made most remarkable independent advances, especially in algebra, the knowledge of mathematics is today very small among China's scholars except where they have recently been under foreign instruction.

The language difficulty has already been mentioned sufficiently. The old system of education quenched the spirit of inquiry and neglected to include knowledge of science as a criterion for political preferment, which was the end of all education. The influence of astrologers, fortune tellers and geomancers was reinforced by the official indifference regarding popular education so long as the government felt that its own security depended somewhat upon the upholding of ancient superstitions and reverences, an attitude which fortunately has now seen its day even in China.

Outlook

A more widespread contact with translations of western books is slowly but surely bringing the reading Chinese into a fuller appreciation of western or more scientific thinking. Their increasing familiarity with the inventions and methods of the west is undermining their superstition, as is, also, the spread of Christian theology.

The changes in the method of instruction and the system of education are for the most part tending to develop a spirit of inquiry and an appreciation of the inductive method, which is beginning to yield due fruit. When the influence of returned students who have been adequately trained in western countries and that of the graduates from first-class mission and government colleges becomes more potent, we can expect to see a much more rapid development of the educational system, but here again the magnitude of the undertaking and the difficulties as to efficient teaching force and adequate resources are such, that only natives can handle the ultimate solution. We teachers from abroad can hardly expect to do more than to give the impulse and to help prepare the vanguard of such an advance.

When special and general education has proceeded far enough to provide the trained men needed to make the various adjustments involved in the tremendously complex and many-sided renaissance of this nation and to have provided the background of an enlightened people, there will of a surety be found among Chinese students many

who will desire to follow the torch of learning and of truth for its own sake, some of whom, we believe, will attain a high degree of analytical power and experimental skill, for the Chinese after all are capable of exact and careful thought under right conditions, and moreover possess unusual patience and manual skill. The Chinese have a power of application and patience and a capacity for detail that is destined to bring success in scientific inquiry when once they get the background, adopt the method and make the start.

The progress destined to be made by western science among the Chinese will surely undermine their faith in the "Book of Changes," which is at the base of Chinese philosophy. What new moral and spiritual ideas are to replace the old in order that the new state of these people may not be worse than the first? Mere education in the science of the west, mere contact with western civilization, commerce, railways, telegraphs, mines, etc., can not be expected to regenerate China, for the Chinese seem never to have been profoundly moved by other than moral and spiritual forces. Education which deals only with coördinated physical or mental facts, conducted however thoroughly, does not prove adequate for the regulation of the conduct of mankind. It is so chiefly intellectual that it leaves man's highest nature unsatisfied and almost untouched; therefore, it is imperative in the present intellectual and material awakening that the more subtle forces which will profoundly affect the soul of the race should be fostered side by side with these others, and that full advantage be taken of the critical state presented by this transition, in order to gain for Christianity its rightful place among the educated men of the rising generation.

At the same time care must be taken to avoid repetition of the unwarranted conflict between science and religion. Our instruction must be such that these two departments are not regarded as antagonistic, but as supplementary, not only in affecting daily life and conduct, but supplementary, also, as revelations of the character and purposes of God. We must, also, avoid the tendency to impose a system which is the outgrowth of western civilization with-

out due regard for the oriental character and mode of thinking. Much of the prejudice against missionary work has doubtless been due to its connection in many instances with dogmatism which happily has been and is being largely eliminated by the broadening of education.

Contradictory characteristics

In reviewing the faults and virtues of this remarkable people, one realizes that they exhibit strangely contradictory characteristics, at least contradictory as we of the West view them, though I am mindful that often the oriental, especially the Chinese, sees no contradiction between ideas or ideals which we may consider mutually exclusive.

Ingenious in small things, they rarely carry their invention in any direction to its natural sequel. Responsible for some of the best of early achievements in applied arts, they have made no great inventions in recent centuries.

As a nation, they present the greatest example of persistence, while as individuals they are often singularly lacking in this quality. They show great economy in use of materials but are very wasteful of time and energy. They build but do not repair.

Kindhearted and in general considerate of animals, in deference to Buddhistic teachings allowing even snakes to live, they let men die of starvation by the roadside and seldom make heroic efforts to save endangered lives; in hard times the lower classes even sell their children to be slaves.

So drilled in usage of the past, they continue in old ways even when the reason for that way has long since ceased. So conscious of their obligation to the past they are comparatively indifferent to the claims of the community in which they themselves are living and have little idea of passing on to the future with interest what they have received from the past. They spend vast sums in reverence to ancestors but destroy the forests that would safeguard their own descendants. They practice early marriage and polygamy for the sake of progeny, and yet impoverish their

posterity. The nation which of all now extant has shown the greatest power of persistence, nevertheless has made the least provision for its own future.

This outstanding result of ancestor worship and the all pervading practice of "squeeze" are the two paramount evils of Chinese life. Serious as these faults are and slow in their removal, they can be overcome by a type of education that will develop the scientific spirit, higher moral ideas, especially a regard for the community and the future, and greater strength of character; in short the highest type of modern education which while training the student for effective service will, also, spiritualize his motives in life. This is, indeed, the high aim many of our American missionary colleges are fulfilling to the extent of their ability.

MISSION SCHOOLS

The opportunity to serve China

Although the first modern schools in China were begun under mission auspices and some of the best educational institutions today are under mission auspices, the education of the Chinese is not the problem of the mission boards; it is China's own problem. But in view of the immensity of the government's task, the missions have an unprecedented opportunity to render a real service to China. Because of the disturbed political conditions ever since the revolution of 1911, the governmental effort at providing general education has, with a few exceptions, been very ineffective and the mission schools have even a greater opportunity today to help mould the educational system of China than was even thought possible in 1911 when such a new spurt was taken under the first republic in educational matters, the most marked since the eventful day in 1905 when a stroke of the Imperial pen abolished the old system of literary examinations and called for the establishment of modern schools throughout the land.

As already indicated, the great handicaps in the government's educational work are the lack of funds, the lack of qualified teachers and the lack of honest and progressive

administrators. An adequate appreciation of the function of education and the precise adjustment of the type attempted to the needs of the community and of the nation are also still to be achieved. It is for these reasons that mission institutions have had and are still to have a very great share in shaping the course of China's educational development.

After several decades of diffused and experimental ministry, which, however, has been of great value and was even a necessary preliminary, the Protestant missions are aiming to furnish China with a thoroughly standardized and coördinated system of Christian education, emphasizing quality rather than quantity, so as to provide educated leadership in the various professions and vocations, and an intelligent and reasonably educated Church membership and dependable citizenship who will constructively influence their community life. This is serving as a challenge and a corrective to the native schools of similar grade.

Statistics of mission schools

Out of a total of 6000 Protestant missionaries, some 4800 are Americans, and of these some 1500 are engaged in educational work, which includes two-thirds of all the educational work at present under way in China under Protestant auspices. Unfortunately the statistics of Catholic work are not available, though there are many French, German and Belgian Catholic missions, and a few American priests who work under one or the other of these missions. Generally speaking, the Catholic missions are not so ambitious from a purely educational point of view, though they are fairly strong on industrial work connected with the production of church fixtures and furnishings, and some of the best scientific work ever done in China both in former and in recent years has been under French Catholic auspices.

Protestant missions in China besides their medical work conducted in 1917-1918, 115 kindergartens, 5276 lower elementary schools, 575 higher elementary, 233 middle or high schools, 28 colleges, 156 normal and training schools,

31 theological schools, 40 industrial schools and 49 orphan-ages—a total of 1227 institutions, with a teaching force of 1471 foreigners (831 of them women) and 9595 Chinese (2783 of them women), and a total enrollment of 170,659 students (54,461 of them girls) distributed as follows: 3196 kindergarten, 133,826 in lower elementary, 19,605 in higher elementary, 12,533 in middle school, 1499 in college, 1409 industrial, 985 theological and 1544 in orphan-ages.

The proportion of female students is highest in the elementary grades where they are about one to two and in the normal school where they outnumber the males nearly two to one. But in middle schools the ratio is one girl to five boys while in actual college grades the ratio is one to twenty-two. There is as yet no institution under government auspices where a girl can get instruction of collegiate grade and only three, probably two, of really collegiate grade under mission auspices.

While complete data are not available, it seems likely that these ratios between female and male students would probably hold good, roughly speaking, for government schools as well as missionary.

The system of Christian education

The system of Christian education ranges from kindergarten to university, is widely spread throughout the country and heads up in the strategic centers mentioned presently. There are nine local Christian Educational Associations covering from one to three provinces each, and in turn affiliated with the Christian Educational Association of China with headquarters in Shanghai.

A relatively small portion of the population of China is found in the cities. Nine-tenths of the population live in the country or in relatively small aggregates, some in isolated homes, but generally clustered in hamlets and villages. These afford a smaller working unit than is usual in many other countries, and are the natural base upon which to start in the education of the common people of

China, whereas the training of the leaders for that more general educational conquest can best be done near the largest cities.

Although the great bulk of missionary education is still in the elementary and secondary grades, in more recent time a number of schools of college grade have been developed, nine even assuming the title of university.

The strategic points at which mission colleges and government institutions also are concentrated are as follows: From south to north through the eastern provinces, Canton, Foochow, Shanghai and the neighboring cities of Hangchow, Soochow and Nanking (all of which are connected with Shanghai by rail), Tsinan, Tientsin and Peking. Then up the Yangtze 650 miles is the educational center of Wuchang and Hankow. South from Hankow two hundred miles we come to Changsha, the capital of Hunan Province, the last to be open to foreign influence, and here Yale maintains an educational and medical mission. Then in the far west at Chengtu, the capital of the great province of Szechwan, there is the beginning of a college which has one of the brightest prospects in all China.

Of 26 colleges, in some of which the bulk of the work is still of high-school grade, 10 are maintained as "union" institutions by several denominational boards coöperating, while two are strictly non-sectarian though Christian. These are Yali or the College of Yale at Changsha, and Canton Christian College which may in a way be regarded as an intercollegiate mission since eight American institutions¹ maintain each a representative on the faculty of this school in distant China as a part of the foreign work of their Student Christian Association or other special organization. Curiously enough both of these institutions have had a remarkable degree of financial support from the Chinese; in the case of Yali this has taken the form of a definite coöperative basis, while at Canton money both for

¹ These are: University of Pennsylvania, Pennsylvania State College, Teachers College of Columbia University, Vassar College, Williams College, University of Pittsburgh, Washington and Lee University and Kansas State Agricultural College.

building and for running expenses has been turned over unconditionally to the Trustees of the College incorporated in New York.

Canton Christian College

The history of the Canton Christian College falls naturally into three periods: Inception, 1884-1903; organization, 1904-1918; and realization, 1919 and beyond. Started by Dr. Happer of the American Presbyterian Mission who raised the initial fund, the college has since become non-sectarian, and standing to serve the whole cause of education under Christian auspices in South China offers an opportunity to the several denominational boards each to support a man on the staff and nominate a trustee. Thus far three boards, two of them English, have accepted. While religious instruction is an integral part of the curriculum, great care is taken to make the atmosphere of the campus wholesome and tolerant and the doors are open to all students qualified by character and scholastic attainment to enter, irrespective of religious belief. The most striking feature of the institution since 1904 when the development of the present site was begun, has been the *rapidity of growth*. The campus has increased from 20 acres to over 130; the two long wooden bungalows which provided temporary shelter for the whole institution in the first years are now supplemented not only by a score of other temporary buildings, many of which are of brick, but by twenty-five permanent fire-resisting and ant-proof buildings, with five more in course of construction. The student body has grown from 60 to 600 and the staff from 6 Americans and 6 Chinese to 31 Americans, 2 British, and 51 Chinese (not counting the wives who do not teach). The budget of current expenses has risen from \$20,000 Hongkong currency to over \$200,000 annually. Only one element has failed to grow, the all important item of endowment; we had none in 1904 and we have almost none in 1919.

Half of the budget for current expenses is met by student fees and rentals; the remainder must be secured each year from generous individuals or supporting groups, Chinese

or American. The investment at the College to date is about as follows: Grounds \$80,000, buildings \$350,000, equipment \$35,000 or a total of \$465,000 United States currency. The rapid growth and this substantial investment make even more urgent the securing of an adequate endowment.

Inaugurated on the petition of over 400 prominent gentry and officials of Kwangtung, the College has in recent years received as much money for all purposes, current expenses as well as buildings, from Chinese sources as from America.

The institution is *coeducational* in all grades, with a total of about 40 girls. In the secondary grades we are in affiliation with the girls' middle school of the American Presbyterian Mission, on the condition that they offer adequate preparation for entrance to our College of Arts and Sciences. The establishment of a separate college for women awaits the development of a more adequate foundation of secondary schools.

English is the medium of instruction for all modern subjects beyond the second year of the secondary school. At the same time a *high standard in Chinese subjects* is maintained and all students are required to study Mandarin, which is also employed as the medium of instruction for some of the courses such as the geography and the history of China.

Three elements of modern education are so entirely novel in comparison with the old style and are now of such recognized importance that a brief mention will suffice to indicate the special emphasis they receive in the Canton Christian College and other progressive schools in China: *The natural sciences, manual training, and athletics.*

In endeavoring to introduce and develop interest in manual training, it has been necessary to proceed wisely, in view of the traditional antipathy toward any sort of manual work on the part of the scholar class. But that the movement has been crowned with abundant success is evident from the spirit exhibited by our students in digging a large outdoor swimming pool two years ago, a tremendous undertaking involving daily participation in dirty work which covered more than a year.

Outdoor games were, of course, introduced at the very inauguration of the institution and naturally the long finger nails and the long gowns were not long in coming off when once the wearer actively participated in a game of association football. That was the first step; other athletic forms were rapidly developed and the total effect of such in opening the mind as well as the pores has been of untold value.

In the line of manual training, more properly speaking, advantage was taken of the traditional reverence for the written and printed "character" and elementary practice in type-setting and printing was introduced as the thin edge of the wedge, which in due course was followed by required work in carpentry, basket and rattan work, and then later in gardening—all in the secondary school. While in the college grades proper nearly the whole time assigned to science courses is spent in laboratory and field work.

Somewhat related to the same principle underlying this athletic and manual work is that involved in military drill. Not only is the discipline of the secondary school conducted on a military basis but military as well as physical drill is required. In the College of Arts and Sciences there is no required military drill but a vigorous volunteer corps has been formed entirely on the students' initiative.

Three major problems of organization have been substantially solved: *The architectural general plan, the administrative function and the scholastic divisions.*

A comprehensive layout has been developed to permit a coördinated and harmonious expansion of the plant. The College maintains a resident architect and has organized its own construction department, thus greatly reducing the cost of buildings.

The type of permanent building adopted combines modern construction with a Chinese aspect, chiefly expressed in the roofs which are of green glazed tile and ornamented and curved according to the best native style. The floors are reinforced concrete, the walls of red brick of a pleasing soft tone. All the buildings are equipped with modern plumbing. It is distinctly the aim of the College so to build as to exemplify structurally and artistically the best combi-

nation of Western and Chinese architecture and thus as well as in other ways to be of help in this period of change in China.

The officers of general administration and the heads of the several schools constitute a Council which draws up the budget and looks after all affairs that concern more than one school, including the inauguration or elimination of departments or schools. With Trustees in New York and the College in China there is an element of administration unknown in an institution in America. This difficulty is reduced by frequent visits of the president from one side of the world to the other, and by delegating to the Council many functions generally performed in more or less detail by the Board of Trustees for a college in America.

There are three main schools of five years each: Elementary, secondary and collegiate, with enrollments (1917-1918) respectively of 120, 330, 103. Some 1100 students have entered the institution since 1899. All regular students are resident on the campus. There are also some 250 extension students, adults and children from the neighboring villages the work for whom, while of a much lower grade scholastically, is exceedingly important from a sociological point of view.

In the College of Arts and Sciences, a faculty of 30 offers courses in four groups: arts, natural sciences, social sciences, agriculture. A medical school, a teachers college and a school of engineering are also projected. After two decades of necessary emphasis on the secondary grades, the College department proper is now fully under way and in June, 1918 the first B.A. degrees were granted.

The opportunity for substantial and satisfying service along educational lines, combined as it is with opportunities for research in an almost untouched field, as regards economics, government, sociology, ethnology, geology and biology, and in the applications of all the sciences to the agricultural and industrial development of a country whose natural wealth is as yet not even surveyed, this great opportunity, we say, does not fail to attract men of high scholarship to membership on the faculty of the College, even on

the reduced financial basis which to too great a degree characterizes missionary enterprises.

Even under present limitations this "man-factory," as the Chinese call it, is a going concern; abundant high-grade "raw material" is available, a qualified staff is "on the job," the work is fully organized, the "plant" is being used to the utmost advantage, and it but remains to put more capital at the disposal of its directors, in order that it may indeed keep pace with its ever-increasing opportunity to supply precisely the product which China so greatly needs for the period of reconstruction which she faces.